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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/311,617	05/13/1999	BRENT TOWNSHEND	99.294	1470

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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER

ARMSTRONG, ANGELA A

ART UNIT PAPER NUMBER

2654

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/311,617	Applicant(s) TOWNSHEND, BRENT	
	Examiner Angela A Armstrong	Art Unit 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-8, 10-12, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sturner et al. (US Patent No. 5,303,327) in view of Junqua (US Patent No. 6,253,181) and further in view of Lewis et al (US Patent No. 5,059,127).

2. As per claims 1,7, 8, 11-12 and 14-17, Sturner et al. disclose a test system/method comprising;

A first set of task that require a subject to provide one or more spoken responses, (see abstract, lines 2-3);

A speech recognition system to receive the spoken response and provide an estimate, (see col. 3, line 64 to col. 4, line 12, col. 6, line 64);

A scoring device to convert the estimate into a score, (see col. 5, lines 4-21).

A computation device for providing a subject score based on a combination of item scores using a scoring computation model that depends upon an expected item-dependent operating characteristic of the speech recognition system-4 (see abstract, lines 6-13).

Subject scores being based reflecting at least one of linguistic ability and cognitive ability, (see col. 2, line 25 continuing to col. 3, line 3),

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Scoring computation reflecting normalized data (see col. 5, line 62 continuing to col. 6, line 15),

Sturner fail to explicitly teach that the subject score accounts for inaccuracies, potential recognition errors, or item-dependent operational characteristics of the speech recognition system.

Lewis describes an item response theory model in which measurements characteristics of test items and operating characteristics are monitored in the computerized testing administering system (col. 5, lines 25-50). Junqua discloses a speech recognition and teaching apparatus able to rapidly adapt to difficult speech of children and foreign speakers. At col. 3, line 60 continuing to col. 5, line 67, Junqua teaches the speech recognition system uses a confidence measurement system that provides a quantitative measure of how reliable each utterance is. Junqua describes a likelihood ratio score that compares the likelihood score associated with correct recognition with the mean or average of likelihood scores associated with incorrect recognition. Junqua teaches the system provides an increase in the recognizer's chance of having a good performance, without adapting to incorrect recognitions (col.1, lines 18-19).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Sturner to implement a confidence measurement system that provides a quantitative measure of system reliability, as taught by Junqua, as well as monitor system operating characteristics, as suggested by Lewis, for the purpose of increasing the recognizers performance and ensuring the tested subject receives an unbiased non-skewed score.

Sturner and Junqua do not evaluate the difficulty of task items in determining a subject score. Lewis (col. 1, line 63 continuing to col. 2, line 1 and col. 2, lines 16-43), describes an item response theory model in which measurements characteristics of test items, including difficulty can be accounted for. It would have been obvious to one of ordinary skill at the time of the invention to implement the teachings of Lewis in the system of Sturner, for the purpose of “allowing creation of a test in which different individuals receive different questions, yet can be scored on a common scale” as well as allowing for the determination in advance of test administration of the level of ability and accuracy of which that ability has been measured (col. 2).

As per claim 2, Sturner et al. disclose a system wherein the scoring computation is based on Item Response Theory, (see col. 5, lines 36-46).

As per claim 3, Sturner et al. disclose a system wherein the speech recognition system, the scoring device and the computation device comprise software modules running on a general purpose computer, (see Fig. 1).

As per claim 4, Sturner et al. disclose a system wherein the scoring computation model is constructed from a plurality of responses provided by a number of native and non-native speakers, the plurality of responses being prompted by a second set of tasks items, (see col. 5, lines 36-39).

As per claim 5, Sturner et al. disclose a system wherein the estimate provided by the speech recognition comprises an estimate of the linguistic content of the spoken response, (see col. 5, lines 48-66).

As per claim 6, Sturner et al. disclose a system wherein at least one task is an item

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selected from a group consisting of a prompt to read a sentence aloud ..., (see col. 6, lines 16-37).

Response to Arguments

3. Applicant's arguments filed December 20, 2004, have been fully considered but they are not persuasive.

Applicant argues Sturner, Junqua, and Lewis are all silent with respect to the item-dependent characteristics of a speech recognition system. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues because Sturner, Junqua, and Lewis do not show or suggest a scoring computation model that depends upon an expected task-item dependent operating characteristic of the speech recognition system, Applicant submits that claims 1, 7, 8, 14, 16, and 17 are not obvious in light of the combination of Sturner, Junqua, and Lewis. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a scoring computation model that depends upon an expected task-item dependent operating characteristic of the speech recognition system) are not recited in the rejected claim(s) 8, 14, 16, and 17. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, the teachings of Lewis for an item

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response theory model in which measurements characteristics of test items and operating characteristics are monitored in the computerized testing administrating system (col. 5, lines 25-50) provides adequate support for the limitations of claims 8, 14, 16, and 17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angela A Armstrong
Examiner
Art Unit 2654

AAA
May 16, 2005

A handwritten signature in cursive script that reads "Angela Armstrong". The signature is written in dark ink and is located at the bottom right of the page.